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ABSTRACT

This brief report summarizes a longer document with the same title. It reviews literature on the importance of using active learning teaching techniques in the classroom, describes what active learning is, discusses how this technique can be incorporated into the classroom and identifies barriers to the use of this approach. Strategies that promote active learning are described as instructional strategies that involve students in doing things and thinking about what they are doing, as opposed to passive listening to a lecture. It is noted that such learning activities have a powerful impact on student learning and that students actually prefer strategies promoting active learning to traditional lectures. Several ways of incorporating active learning into the classroom are suggested, such as: (1) pausing in lectures to allow students to consolidate their notes; (2) including brief demonstrations or short, ungraded writing exercises followed by discussion; (3) developing group discussions; (4) using feedback and guided lectures; and (5) using debates, problem-solving models, and role playing. Barriers to implementing active learning include faculty resistance, class time availability, class size, inadequate materials and equipment, and teacher preparation time. Contains seven references. (GLR)

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Active Learning: Creating Excitement in the Classroom

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Research consistently has shown that traditional lecture methods, in which professors talk and students listen, dominate college and university classrooms. It is therefore important to know the nature of active learning, the empirical research on its use, the common obstacles and barriers that give rise to faculty members' resistance to interactive instructional techniques, and how faculty, faculty developers, administrators, and educational researchers can make real the promise of active learning.

What Is Active Learning and Why Is It Important?

Surprisingly, educators' use of the term "active learning" has relied more on intuitive understanding than a common definition. Consequently, many faculty assert that all learning is inherently active and that students are therefore actively involved while listening to formal presentations in the classroom. Analysis of the research literature (Chickering and Gamson 1987), however, suggests that students must do more than just listen: They must read, write, discuss, or be engaged in solving problems. Most important, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis, and evaluation. Within this context, it is proposed that strategies promoting active learning be defined as instructional activities involving students in doing things and thinking about what they are doing.

Use of these techniques in the classroom is vital because of their powerful impact upon students' learning. For example, several studies have shown that students prefer strategies promoting active learning to traditional lectures. Other research studies evaluating students' achievement have demonstrated that many strategies promoting active learning are comparable to lectures in promoting the mastery of content but superior to lectures in promoting the development of students' skills in thinking and writing. Further, some cognitive research has shown that a significant number of individuals have learning styles best served by pedagogical techniques other than lecturing. Therefore, a thoughtful and scholarly approach to skillful teaching requires that faculty become knowledgeable about the many ways strategies promoting active learning have been successfully used across the disciplines. Further, each faculty member should engage in self-reflection, exploring his or her personal willingness to experiment with alternative approaches to instruction.

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How Can Active Learning Be Incorporated in the Classroom?

The modification of traditional lectures (Penner 1984) is one way to incorporate active learning in the classroom. Research has demonstrated, for example, that if a faculty member allows students to consolidate their notes by pausing three times for two minutes each during a lecture, students will learn significantly more information (Ruhl, Hughes, and Schloss 1987). Two other simple yet effective ways to involve students during a lecture are to insert brief demonstrations or short, ungraded writing exercises followed by class discussion. Certain alternatives to the lecture format further increase students' level of engagement: (1) the feedback lecture, which consists of two minilectures separated by a small-group study session built around a study guide, and (2) the guided lecture, in which students listen to a 20- to 30-minute presentation without taking notes, followed by their writing for five minutes what they remember and spending the remainder of the class period in small groups clarifying and elaborating the material.

Discussion in class is one of the most common strategies promoting active learning—with good reason. If the objectives of a course are to promote long-term retention of information, to motivate students toward further learning, to allow students to apply information in new settings, or to develop students' thinking skills, then discussion is preferable to lecture (McKeachie et al. 1986). Research has suggested, however, that to achieve these goals faculty must be knowledgeable of alternative techniques and strategies for questioning and discussion (Hyman 1980) and must create a supportive intellectual and emotional environment that encourages students to take risks (Lowman 1984).

Several additional strategies promoting active learning have been similarly shown to influence favorably students' attitudes and achievement. Visual-based instruction, for example, can provide a helpful focal point for other interactive techniques. In-class writing across the disciplines is another productive way to involve students in doing things and thinking about the things they are doing. Two popular instructional strategies based on problem-solving models include the case study method of instruction and Guided Design. Other active learning pedagogies worthy of instructors' use include cooperative learning, debates, drama, role playing and simulation, and peer teaching. In short, the published literature on alternatives to traditional classroom presentations provides a rich menu of different approaches faculty can readily add to their repertoire of instructional skills.

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What Are the Barriers?

To address adequately why most faculty have not embraced recent calls for educational reform, it is necessary first to identify and understand common barriers to instructional change, including the powerful influence of educational tradition; faculty self-perceptions and self-definition of roles; the discomfort and anxiety that change creates; and the limited incentives for faculty to change.

But certain specific obstacles are associated with the use of active learning including limited class time; a possible increase in preparation time; the potential difficulty of using active learning in large classes; and a lack of needed materials, equipment, or resources.

Perhaps the single greatest barrier of all, however, is the fact that faculty members' efforts to employ active learning involve risk—the risks that students will not participate, use higher-order thinking, or learn sufficient content, that faculty members will feel a loss of control, lack necessary skills, or be criticized for teaching in unorthodox ways. Each obstacle or barrier and type of risk, however, can be successfully overcome through careful, thoughtful planning.

What Conclusions Should Be Drawn and Recommendations Made?

The reform of instructional practice in higher education must begin with faculty members' efforts. An excellent first step is to select strategies promoting active learning that one can feel comfortable with. Such low-risk strategies are typically of short duration, structured and planned, focused on subject matter that is neither too abstract nor too controversial, and familiar to both the faculty member and the students.

Faculty developers can help stimulate and support faculty members' efforts to change by highlighting the instructional importance of active learning in the newsletters and publications they distribute. Further, the use of active learning should become both the subject matter of faculty development workshops and the instructional method used to facilitate such programs. And it is important that faculty developers recognize the need to provide follow-up to, and support for, faculty members' efforts to change.

Academic administrators can help these initiatives by recognizing and rewarding excellent teaching in general and the adoption of instructional innovations in particular. Comprehensive programs to demonstrate this type of administrative commitment (Cochran 1989) should address institutional employment policies and practices, the allocation of adequate resources for instructional development, and the development of strategic administrative action plans.

Equally important is the need for more rigorous research to provide a scientific foundation to guide future practices in the classroom. Currently, most published articles on active learning have been descriptive accounts rather than empirical investigations, many are out of date, either chronologically or methodologically, and a large number of important conceptual issues have never been explored. New qualitative and quantitative research should examine strategies that enhance students' learning from presentations; explore the impact of previously overlooked, yet educationally significant, characteristics of students, such as gender, different learning styles, or stage of intellectual development; and be disseminated in journals widely read by faculty.

In retrospect, it appears that previous classroom initiatives and written materials about active learning have all too often been isolated and fragmented. The resulting pedagogical efforts have therefore lacked coherence, and the goal of interactive classrooms has remained unfulfilled. Through the coordinated efforts of individual faculty, faculty developers, academic administrators, and educational researchers, however, higher education in the coming decade *can* make real the promise of active learning!

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